

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of transmitting over four transmit antennas comprising:

for each antenna, generating a respective sequence of OFDM symbols, each OFDM symbol having a plurality of sub-carriers carrying [at] data or pilots, and transmitting the sequence of OFDM symbols;

wherein pilots are inserted for the four antennas collectively in blocks of two sub-carriers by two OFDM symbols scattered in time and frequency.
2. (Original) The method of claim 1 wherein pilots are inserted for the four antennas collectively in blocks of two sub-carriers by two OFDM symbols scattered in time and frequency by:

inserting such blocks of two sub-carriers by two OFDM symbols scattered in a first regularly spaced pattern in even pairs of OFDM symbols;

inserting such blocks of two sub-carriers by two OFDM symbols scattered in a second regularly spaced pattern offset from said first regularly spaced pattern in odd pairs of OFDM symbols.
3. (Cancelled)
4. (Original) The method of claim 1 wherein each block of two sub-carriers by two OFDM symbols comprises a single pilot for each of the four antennas in a respective position within the block.

5. (Original) The method of claim 4 wherein the single pilot for each of the four antennas takes the same position in every block of two sub-carriers by two OFDM symbols.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Currently Amended) A method of transmitting over four transmit antennas comprising:

for each antenna, generating a respective sequence of OFDM symbols, each OFDM symbol having a plurality of sub-carriers carrying [at] data or pilots, and transmitting the sequence of OFDM symbols;

wherein for a first pair of the four antennas, pairs of pilots are inserted scattered in time and frequency;

wherein for a second pair of the four antennas, pairs of pilots are inserted scattered in time and frequency in locations different from pilots for the first pair of antennas.

12. (Original) The method of claim 11 wherein for each pair of two pilots, the two pilots are not consecutive in time or frequency.

13. (Original) The method of claim 11 wherein for each pair of two pilots, the two pilots are arranged consecutively in time.

14. (Cancelled)

15. (Currently Amended) A method of transmitting over four transmit antennas comprising:

for each antenna, generating a respective sequence of OFDM symbols, each OFDM symbol having a plurality of sub-carriers carrying [at] data or pilots, and transmitting the sequence of OFDM symbols;

wherein pilots are arranged in groups of four consecutive pilots in time, each group of four consecutive pilots containing pilots for the four antennas.

16. (Original) The method of claim 15 wherein such groups of four consecutive pilots are inserted in each set of four consecutive OFDM symbols, and in each of a plurality of spaced sub-carriers.

17. (Cancelled)

18. (Original) The method of claim 15 wherein each group of four consecutive pilots comprises a single pilot for each of the four antennas.

19. (Original) The method of claim 18 wherein the location of the single pilot for each antenna varies across groups of four consecutive pilots.

20. (Currently Amended) The method of ~~any preceding~~ claim 1 further comprising:

using different pilot patterns for respective four antenna transmitters to reduce interference between pilots of different four antenna transmitters.

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) The method of ~~any preceding~~ claim 1 further comprising transmitting at least one fixed pilot for each of at least one of the four antennas.

25. (Currently Amended) The method of ~~any preceding~~ claim 1 further comprising transmitting at least one fixed pilot for each of two pairs of antennas within said four antennas.

26. (Currently Amended) The method of ~~any preceding~~ claim 1 further comprising transmitting at least one fixed signalling channel for each of two pairs of antennas within said four antennas.

27. (Currently Amended) The method of ~~any preceding~~ claim 15 further comprising:

transmitting relatively reliable signalling channel information proximal in time and frequency to locations of pilots.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)

46. (Currently Amended) A transmitter comprising four transmit antennas, the transmitter being adapted to implement the method of ~~any one of claims~~ claim 1 to 36, 40 to 43.

47. (Currently Amended) At least two base station transceivers collectively comprising four transmit antennas, the at least two base station transceivers adapted to implement the method of ~~any one of claims~~ claim 1 to 36, 40 to 43.

48. (Cancelled)

49. (New) A transmitter comprising four transmit antennas, the transmitter being adapted to implement the method of claim 11.

50. (New) A transmitter comprising four transmit antennas, the transmitter being adapted to implement the method of claim 15.

51. (New) At least two base station transceivers collectively comprising four transmit antennas, the at least two base station transceivers adapted to implement the method of claim 11.

52. (New) At least two base station transceivers collectively comprising four transmit antennas, the at least two base station transceivers adapted to implement the method of claim 15.